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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,026	12/06/2001	Jason Charles Pelly	450110-03711	4730
20999	7590	09/19/2005		
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			EXAMINER KRONENTHAL, CRAIG W	
			ART UNIT 2623	PAPER NUMBER
DATE MAILED: 09/19/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/010,026

Applicant(s)

PELLEY ET AL.

Examiner

Craig W. Kronenthal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-16 and 21-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-16, 21-31, 39, 41, 43, 54-57, 59, 63-65, 67 and 68 is/are allowed.
- 6) ☒ Claim(s) 32, 37, 38, 44-46, 52, 53, 58, 60, 61 and 66 is/are rejected.
- 7) ☒ Claim(s) 33-36, 47-51 and 62 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/04, 9/02, 12/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed April 4, 2005, has been entered and made of record.
2. The examiner's objection to the drawings is withdrawn.
3. The examiner's objection to the specification, specifically the abstract, is withdrawn in view of the amendment.

Response to Arguments

4. Applicant's arguments, see p. 25 of the Remarks/Arguments, filed April 4, 2005, with respect to the rejection(s) of claim(s) 39, 54, 59, and 64 under U.S.C. 103(a) as being unpatentable over Donescu et al. (PN 6,674,873) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.
5. Applicant's arguments, see p. 26 of the Remarks/Arguments, filed April 4, 2005, with respect to the rejection(s) of claim(s) 40, 41, 50, 56, and 65 under U.S.C. 103(a) as being unpatentable over Donescu et al. (PN 6,674,873) in view of Beattie et al. (PN 6,804,374) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.
6. Applicant's arguments, see p. 26 of the Remarks/Arguments, filed April 4, 2005, with respect to the rejection(s) of claim(s) 42, 43, and 57 under U.S.C. 103(a) as being unpatentable over Donescu et al. (PN 6,674,873) in view of Beattie et al. (PN

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6,804,374) and further in view of Cox et al. (PN 5,930,369) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

7. Applicant's arguments with respect to claims 32, 44, 45, 46, 58, and 66 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 32 is rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. ("A Digital Watermark Based on the Wavelet Transform and its Robustness on Image Compression") (hereinafter Inoue).

Regarding Claims 32, 45, 46: Inoue discloses a method of embedding data in an information signal representing material, said method comprising the steps of:

- Producing transform coefficients C_i of the material [An image undergoes wavelet transformation to produce wavelet coefficients (p. 392, 2.2 Zerotrees of Wavelet Coefficients, first paragraph, first sentence).];

- Comparing the magnitudes of the coefficients with a threshold value T [The magnitudes of the coefficients (x) are compared to an amplitude threshold (T) (p. 392, 2.2 Zerotrees of Wavelet Coefficients, first paragraph, third sentence); and
- Producing, from the coefficients C_i (insignificant wavelet coefficients) and said data (information data), modified coefficient values C_i' (zerotree with watermark embedded) which are modified by respective information symbols of a pseudo random symbol sequence ($W(k)$) modulated by said data to be embedded (m) [Insignificant coefficients are modified by watermark data, modulated by an embedded intensity embedded, to create watermark embedded zerotrees (p. 392, 4 Watermark Method Using Insignificant Coefficients, first paragraph including steps 1-5).];
- Wherein said step of producing modified coefficient values (watermark embedded zerotrees) does not use coefficients of magnitude greater than said threshold T (insignificant wavelet coefficients) and does not use the corresponding information symbols ($W(k)$), the value of said threshold T being set to reduce a likelihood of any coefficient having a dominant effect on a correlation of the pseudo random symbol sequence and the information signal in which the data has been embedded [The wavelet coefficients (x) are compared to a threshold (T) to find insignificant coefficients, which are those coefficients which will not have a dominant effect (p. 392, 2.2 Zerotrees of Wavelet Coefficients, first paragraph, third sentence).].

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Regarding Claim 37, 52: Inoue discloses a method according to claim 32, wherein said transform is a wavelet transform (p. 392, 2.2 Zerotrees of Wavelet Coefficients, first paragraph, first sentence).

Regarding Claim 38, 53: Inoue discloses a method according to claim 32, wherein said transform is a spatial frequency transform [A wavelet transform is one type of a spatial frequency transform (p. 392, 2.2 Zerotrees of Wavelet Coefficients, first paragraph, first sentence).].

Regarding Claim 61: Inoue discloses a method according to claim 32, wherein said material comprises video material [The methods teach embedding watermarks in image signals and therefore applicable to video material, which is a plurality of images (Abstract, first sentence).].

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claims 44, 58, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su et al. ("Blind Digital Watermarking for cartoon and map images") (hereinafter Su) in view of Donescu et al. (PN 6,674,873) (hereinafter Donescu).

Regarding Claims 44, 58, and 66: Su discloses a method of embedding data in an information signal representing material, the method comprising the steps of:

- receiving transform coefficients C_i representing the information signal [The selected original significant coefficients represent the received transform coefficients C_i (p. 299, 3.1 Watermark Casting, third paragraph, last sentence).];
- comparing the magnitudes of said transform coefficients C_i with a threshold T_{clip} [The T_{clip} is referred to as some specified value (p. 299, 3.1 Watermark Casting, third paragraph, last sentence).];
- clipping, to the magnitude T_{clip} , the magnitudes of those of the coefficients having a magnitude exceeding T_{clip} to produce clipped coefficients [The magnitudes of the original significant coefficients are truncated to the specified value (p. 299, 3.1 Watermark Casting, third paragraph, last sentence).]; and
- producing modified coefficients C_i' values dependent on a scaling factor and the data to be embedded [The scaling factor (α) is used along with the "pseudo-original" significant coefficients to be embedded to produce the protected watermark coefficients (p. 299, 3.1 Watermark Casting, second paragraph, and equations 4 and 5).]

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Su does not disclose the scaling factor to be calculated using the “pseudo-original” significant coefficients. However, Donescu discloses a scaling factor (modulation amplitude) calculated using the coefficients to be embedded (low-frequency coefficients) (col. 10 lines 36-42). It would have been obvious to one of ordinary skill in the art to modify Su to calculate the scaling factor according to the coefficients to be embedded, which in the case of Su would be the truncated “pseudo-original” significant coefficients, as taught by Donescu. Furthermore, one of ordinary skill in the art would be motivated to make this modification since Su discloses that the value of the scaling factor (α) is adjustable to increase image fidelity or watermark protection (p. 299, 3.1 Watermark Casting, second paragraph).

12. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Wilkinson et al. (“Tools and Techniques for Globally Unique Content Identification”) (hereinafter Wilkinson).

Regarding Claim 60: Inoue discloses a method according to claim 32, but does not disclose the watermark data being a unique material identifier. However, Wilkinson discloses embedding a watermark such as a unique material identifier (p. 797, Watermarking, first sentence). It would have been obvious for Inoue to have used this unique material identifier as $W(k)$. One would have been motivated to make this

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modification because of its capability to be embedded such that it is invisible to the eye and resistant to compression artifacts, such as those caused by a wavelet transform.

Allowable Subject Matter

13. Claims 5-16, 21-31, 39-43, 54-57, 59, 63-65, 67, and 68 are allowed.

14. Claims 33-36, 47-51, and 62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. Applicant's submission of the information disclosure statements under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on December 6, 2001 and December 3, 2004 prompted the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig W. Kronenthal whose telephone number is (571) 272-7422. The examiner can normally be reached on 8:00 am - 5:00 pm / Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (571) 272-7414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9/12/05
CWK

JINGGE WU
PRIMARY EXAMINER

